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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/737,531      | 12/13/2000  | Siming Lin           | 5150-46400          | 9817             |

7590 11/19/2003  
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EXAMINER

WU, JINGGE

ART UNIT PAPER NUMBER

2623

DATE MAILED: 11/19/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/737,531

Applicant(s)

LIN ET AL.

Examiner

Jingge Wu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 10,21,27-31,37 and 44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-9,11-20,22-26,32-36 and 38-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Applicant's election with traverse of species IV in paper No. 6 is acknowledged. Regarding to Applicant's argument in paper No. 6, Examiner believed that the species III (fig. 12) is directed to a process of charactering the color of a pixel using only color sensitive level specified by the user to determine the desired distribution among multiple bins and the species IV (fig. 14) is directed to another process of charactering the color of a pixel employing a fuzzy membership function to determine the desired distribution among multiple bins. The examiner disagrees with Applicant that claims 1-30 and 32-45 are genetic to both species III and IV because the claims seems to only read on species IV (no sensitivity level mentioned and claim 27 mentions template image which read only on species III). In addition, claims 10, 21, and 44 are not read on the species IV. Accordingly, Claims 1-9, 11-20, 22-26, 32-36, 38-43 and 45 are now presented for prosecution. Claims 10, 21, 37, 44 and 27-31 are withdrawn from consideration.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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3. Claims 1-6, 8-9, 11-17, 19-20, 22-23, 25-26, 32-36, 38-43 and 45 are rejected under 35 U.S.C. 102(e) as being anticipated by the article "Embedding fuzzy logic in the content based image retrieval" to Vertan et al.

As to claim 1, Vertan discloses a computer-implemented method for characterizing colors of an image, comprising:

for each respective pixel of at least a subset of pixels of the image assigns values to one or more color categories based on color information of the pixel (abstract, page 85-86 section 2);

wherein, the assigning comprises assigning values to a plurality of the color categories (color bins of the histogram) based on color information of the pixel (page 85-86 section 2); and

determining information (h1 (c)) regarding the total values of pixels assigned to each of color categories, wherein said information characterizes colors of the image (abstract, page 85-86 section 2).

As to claims 2-3, Vertan further discloses assigning the percentage of the pixel to each of the color categories and the sum of the percentages assigned to each of the color categories is 100 percent (inherent from equations 1 and 2)(page 86).

As to claim 4, Vertan further discloses each of color categories corresponding to a portion of a color space (It is inherent because each color of a pixel is a point of a color space and the subset of color pixels of a color bin of histogram is a corresponding portion of color space).

As to claims 5-6 and 8, Vertan further discloses assigning values comprising:

determining a location of the pixel by examining color information within the color space (page 86 and page 89, note that determining a location is inherent because the inter-color distance is determined);

applying a function (fuzzy membership function) based on the location (distance) of the pixel to determine the values assigned to the color categories (abstract, page 85-86 section 2).

As to claim 9, Vertan further discloses a step or triangle fuzzy membership (page 86, H2 (c)).

As to claim 11, Vertan further discloses creating a data structure (fuzzy histogram) having values representing total values of pixels assigned to each of the color categories (bins) (abstract, page 85-86 section 2).

As to claims 12-17, 19-20, 22-23, 25-26, 32-36, 38-43 and 45, the claims are the method, system, and ,memory medium corresponding method claims to claims 1-6, 8-9, 11 respectively. The discussion are addressed with regard to claims 1-6, 8-9, 11.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7, 18, 24, are rejected under 35 U.S.C. 103(a) as being unpatentable over Vertan.

As to claims 7, 18, 24, Vertan further discloses Lab color space and examining color information of the pixel but does not mention HSI color space. However, the HSI color space can be obtained through transforming Lab color space and is equivalent to the Lab color space.

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Moreover, Examiner takes Official Notice that this feature is notoriously well known in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the HSI color space in the method of Vertan in order to directly measure and calculate the hue, saturation, and intensity information. Doing so would allow the method to have more directness for color information than use the Lab color space.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,272,239 to Colla et al., US 6625308 to Acharya et al., US 5652881 to Takahashi et al., and the article "Fuzzy color histogram: an efficient color feature for image indexing and retrieval" to Han et al. disclose methods for using fuzzy function to index or character an image.

### **Contact Information**

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7. Any inquiry concerning this communication or earlier communications should be directed to Jingge Wu whose telephone number is (703) 308-9588. He can normally be reached Monday through Thursday from 8:00 am to 5:30 pm. The examiner can be also reached on second alternate Fridays.

Any inquiry of a general nature or relating to the status of this application should be directed to TC customer service whose telephone number is (703) 306-0377.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Amelia Au, can be reached at (703) 308-6604.

The Working Group Fax number is (703) 872-9314.

Jingge Wu

Primary Patent Examiner

